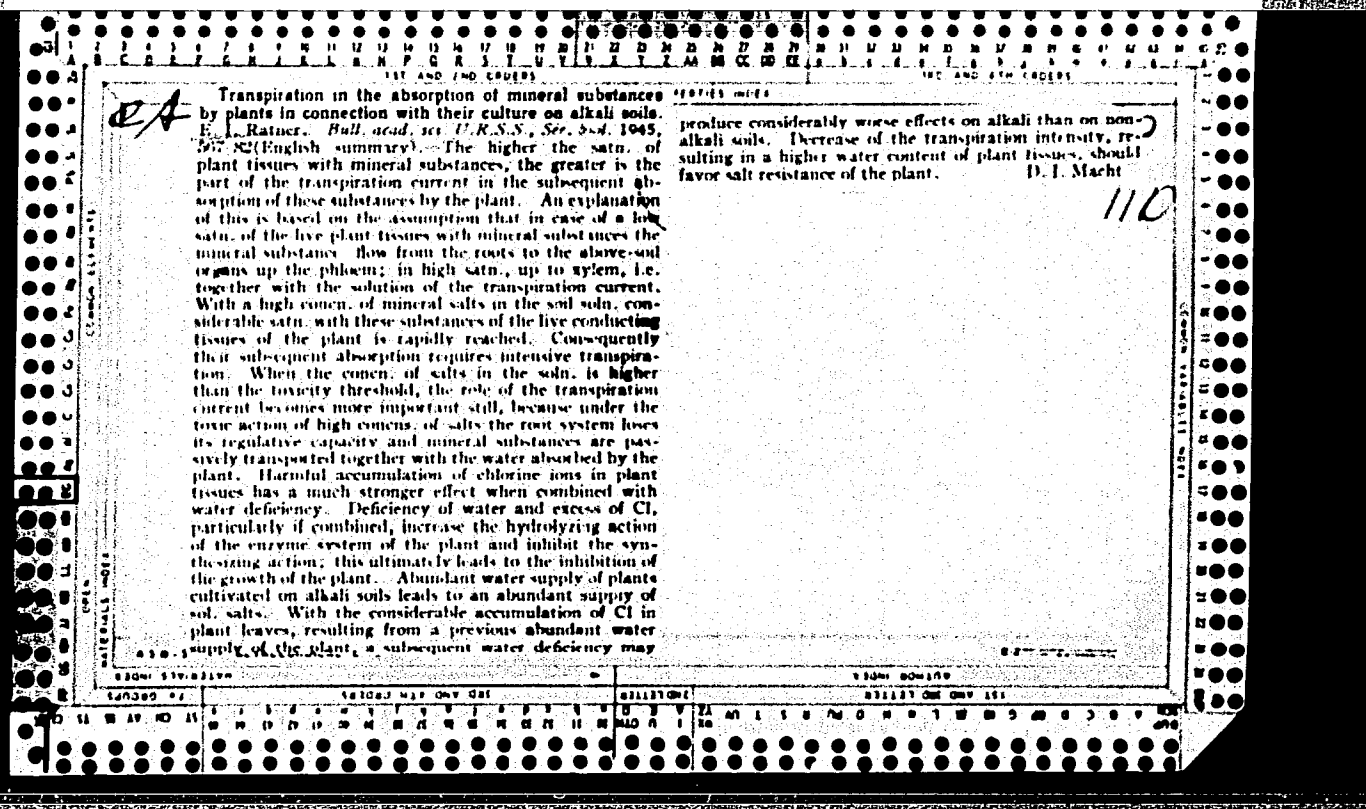




24

10

PROPERTIES AND PRESENTATION

The movement of aluminum in soils and the phosphorus nutrition of plants. E. I. Ratner. *Phytology* (U.S.S.R.) 1940, No. 2, 95-100 (English summary, 104-1). -- Expts. show that by supplying sufficient P for plants, the mobile Al does not interfere with the yield. It is pointed out that Al is taken in by plants, causing a pptn. of P and therefore resulting in P starvation. Large quantities of P are also absorbed.

I. S. Joffe

K. A. TIMIRYAZEV INST. Physiol. Plants

450-550. METALLURGICAL LITERATURE CLASSIFICATION

RATNER, V.A., dotsent (Khar'kov)

Tonillitis. Med. sentra 20 no. 6:32-37 Jo '61.
(TONSILS--DISEASES)

(MIRA 14:7)

KIM, M.P., glav. red.; ARUTYUNYAN, Yu.V., red.; GUSEV, K.V., red.;
DANILOV, V.P., red.; SHARAPOV, G.V., red.; IVANOVA, R.S.,
red.; KACHURINA, A.V., red.; RATNER, V.I., red.; NAUMOV,
K.M., tekhn. red.

[Alliance between the working class and peasantry at the
present-day stage] Soiuz rabochego klassa i krest'ianstva
na sovremennom etape. Moskva, Izd-vo VPSH i AON, 1962.
358 p. (MIRA 15:9)

1. Moscow. Akademiya obshchestvennykh nauk.
(Agricultural policy)

DATE: 11/11/2011

Use of two live colors increases quality of breeding operations.
See also: 50.7471 & 165. (MIRA 1319)

1. Кедровый спелый лес (остр. С. Я. Лавренко).

ARBUZOV, B.A.; ISAYEVA, Z.G.; RATNER, V.V.

Action of lead tetraacetate on Δ^3 -carene. Izv. AN SSSR Otd.-
khim.nauk no.4:644-649 Ap '62. (MIRA 15:4)

1. Khimicheskii institut im. A.M. Butlerova Kazanskogo universiteta
im. V.I. Ul'yanova-Lenina.
(Lead acetates) (Carene)

WATNER, T. E.; ANDERSON, L. A. - ARGONINE, L. A.

"On the Mechanism of the Intake by the Plant of the Nutrient Materials Fixed by Adsorption (The Role of the Contact Exchange)," Ibid., 52, No. 5, 1946; K. A. Timiriazev Inst. Plant Physiol., Acad. Sci. 1946-.

RATNER, Ye. I.

"Peculiarities and Mechanisms of Absorption by Plants of Absorptively-Combined Nutriments From Soil," Sub. 21 Feb 47, Inst of Physiology of Plants imeni K. A. Timiryazev, Acad Sci USSR.

Dissertations presented for degrees in science and engineering in Moscow in 1947.

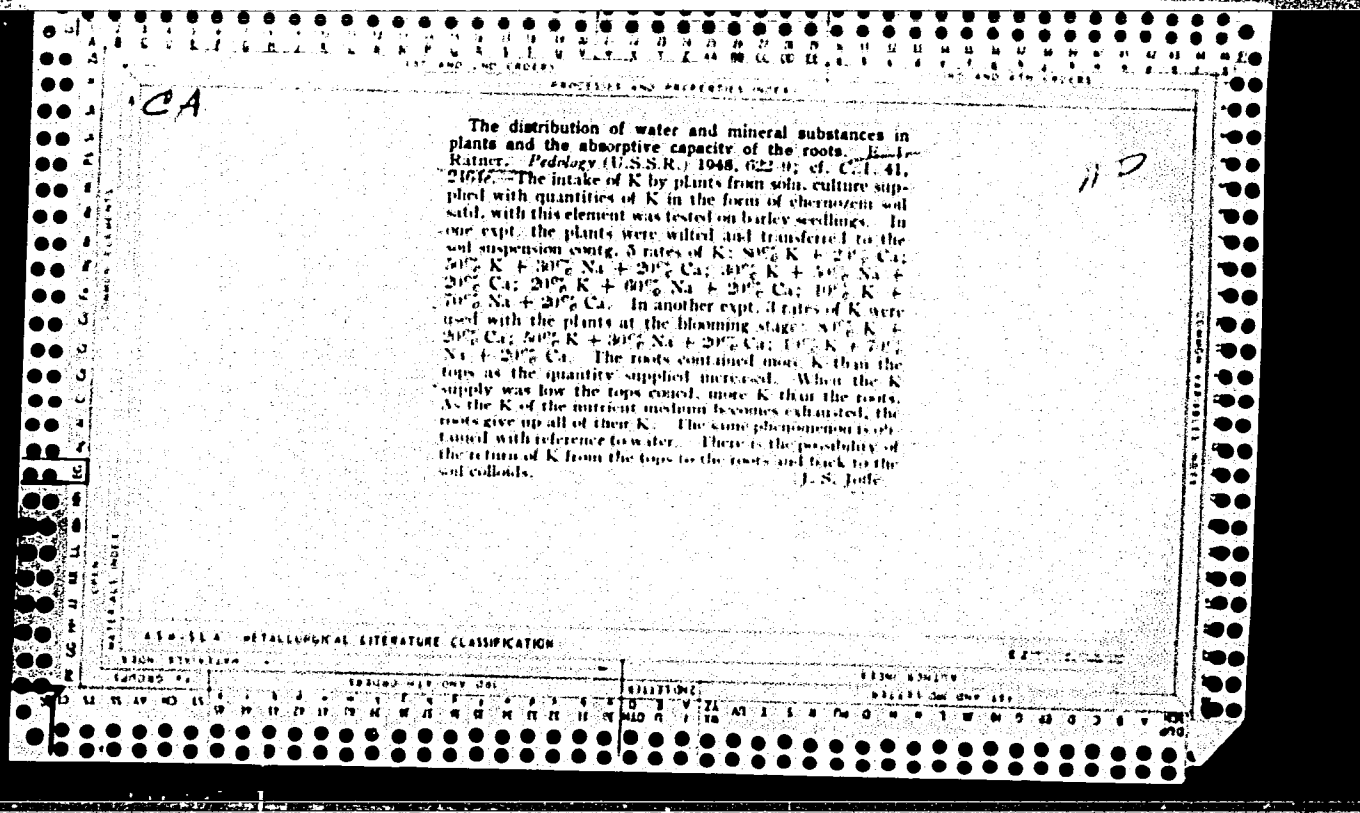
SO: Sum.No.457, 18 Apr 55

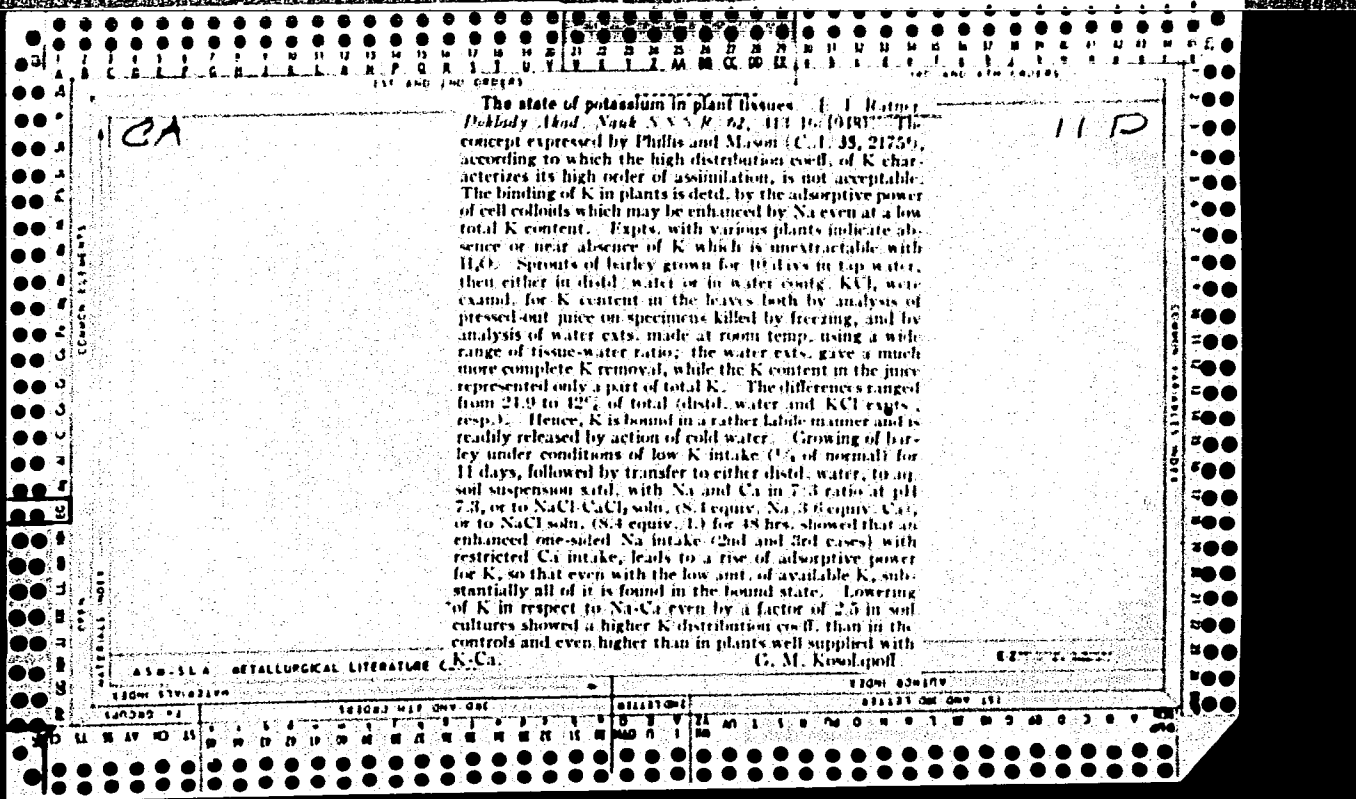
RAIKER Ye. I.

25701

O Povyshenii Effektivnosti Fosfatov. Sov. Agronomiya 1948, No. 7, s. 53-62.

SO: LETOPIS NO. 30, 1948





(A) "D

Influence of cations on some intracellular processes in plants in relation to the source of absorption of the cations by the roots. R. I. Ratner and T. A. Akhmedova. *Izvst. Akad. Nauk S.S.S.R. Ser. Biol.* 1949, 280-315. --- Review with many references is supplemented by exper. with *Suaeda corniculata*, tobacco, and wheat. Plant nutrition based on cations which are colloidal bound with the soil differs from the cultures in soils of the same cations and is affected by the mechanism of cation absorption. G. M. Kozlov

PATNER, YE.

Patner, Ye. - "A remote station", (Experience from the work of the railroad workers of the Stenda station, sketch), Ogonek, 1949, No. 22, p.6-7.

SC: U-4630, 16 Sept. 53, (Letopis 'Zhurnal 'nykh Statey, No. 23, 1949).

БАННИКАЯ, (А.А.) канд. техн. наук; РАТNER, Ys, S.

Stand for testing the stability of loaders. Stro1. i dor. nash. 10
no. 126-27. 12 12.

(MIRA 19:8)

RATNER, Ye. R., inzh.

Effect of the full shape ratio on certain technical characteristics
for inland navigation load carriers. Sudostroenie 25 no.12:
6-8 D '59. (MIRA 13:4)
(Shipbuilding) (Inland water transportation)

8049 Mineral Nutrition of Plants and the Absorptive Power of Soils. (Mineral Nutrition of Plants and the Absorptive Power of Soils.) E. I. Rauter. 119 pages. 1950. Academy of Sciences of the USSR, Moscow and Leningrad. (QK86 R18m)

Concerned mainly with absorption binding of certain substances in soils and the availability of such substances to plants. Special attention is paid to the behavior of Ca, K, P, and Na. Solonch soils in the U. S. S. R. are studied in relation to the possibility of their fertilization.

RATNER, Ye. I.

Methods of adapting plants to cation nutrition in the soil. Probl.
bot. no.1:427-448 '50. (MLRA 8:11)

1. Institut fiziologii rasteniy imeni K.A.Timiryazeva Akademii nauk
SSSR, Moscow
(Minerals in soils) (Plants--Assimilation)

RATNER, E. I.

"The Mineral Alimentation of Plants and the Absorption Quality of the Soil." (p. 125)
by Rubin, B. A. and Ratner, E. I.

SO: Achievements of Modern Biology (Uskpekhi Sovremennoy Biologii) Vol. XXXII, No.1 (4)
Moscow-Leningrad, July-August, 1951.

8 2
1951

Original Biological Chemistry
11 B

Formation of organic acids in plants in dependence on the conditions of the supply of cations. K. I. Ratner, and I. A. Akimochkina (Timiryazev Plant Physiol. Inst., Moscow). *Doklady Akad. Nauk S.S.S.R.* 77, 1111-14 (1951). In expts. with sugar beets CaCl_2 , NaCl , MgCl_2 , and KCl were introduced with or without previous satn. of the soil with the resp. salts or their mixts. In all cases formation of org. acids increased when cations were introduced in adsorption-bound state; introduction of cations as chlorides caused a decrease of org. acid levels. The increased content of org. acids does not necessarily follow a decline of sugar. Wheat was placed in a suspension of chernozem soil that had been freed of exchange cations by washing with 0.05 N HCl and was then satd. with K by treatment with KOH soln. to pH 7.8; a control specimen was placed in KCl soln. at pH 5. The formation of org. acids in the 1st case was doubled within 48 hrs., while the KCl specimen showed no change. The pH in itself is not important. KH_2PO_4 (pH 4.5) gave much lower org. acid content in wheat plants than K_2HPO_4 (pH 8.9). The relative rate of absorption of the cations and anions is the controlling factor in org. acid formation. Introduction of K in soil-adsorbed condition gave a higher level of org. acids (citric) in tobacco.
G. M. Kowaloff

1. RATNER, YE. I., AKIMOCHKINA, T. A.
2. USSR (600)
4. Phosphorus - Isotopes
7. Application of isotopes in the study of speed of assimilation by plants of fertilizer granules places in soil with a variance in respect to seeds sown. Dokl. AN SSSR, 86, No. 4, 1952
9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

RATNER, E.I.

Physiological characteristics of the salt effect in halophytes and
glycophytes. Doklady Akad. Nauk S.S.S.R. 88, 357-60 '53. (MLRA 6:1)
(CA 47 no.14:7040 '53)

BTR, v. 3,
Feb. 1954
Agriculture

1467* A New Link in the Nourishment System of Grasses in Connection With the Problem of Regulating the Microbial Composition in the Rhizosphere of Cultivated Plants. (Russian.) LE. I. Ratner, T. A. Akimochkina, and S. A. Samoilova. *Doklady Akademii Nauk SSSR*, v. 91, no. 2, July 11, 1953, p. 421-424.
Neutralized industrial superphosphate equivalent to 10 kg. of P_2O_5 per hectare was broadcast along with the seed. Nitrogen fixing bacteria were stimulated. Tables. 10 ref.

P. 1. 1. 1.

Paths of utilization by plants of potassium absorbed by the soil. E. I. Rabinovich, A. A. Timonovskiy Inst., Plant Physiol. Acad. Sci. U.S.S.R., Moscow. Doklady Akad. Nauk S.S.R. 93, 547-548 (1954). Plants were grown with corn plants in which parts of the root system were directed to sections of the nutrient vessel with different nutrient conditions, with various soil specimens treated or untreated with added K. The results show that within the limits of satn. of soil specimens by K the presence or the absence of actual root contact with the soil particles distd. the extent of assimilation of K by the roots. Contact through the soil only was much less effective than the direct mech. contact.

G. M. Kozlovskiy

RATNER, Ye.I.

Effect of nitrogen on plant development and the relation of the
action of growth stimulators to conditions of mineral nutrition.
Trudy Inst.fiziol.rast. 8 no.2:100-133 '54. (MIRA 8:5)

1. Institut fiziologii rasteniy im. K.A.Timiryazeva Akademii nauk
SSSR.

(Plants, Effect of nitrogen on) (Plants, Effect of minerals
on) (Growth promoting substances)

RATNER, E. I.

USSR/Biology - Marked atoms

Card 1/1 Pub. 86 - 4/37

Authors : Ratner, E. I., and Kolosov, I. I.

Title : Feeding the roots of plants and new methods of research

Periodical : Priroda 43/10, 28-35, Oct 1954

Abstract : A description is given of the use of marked atoms in the study of the physiology of plants and the use of various fertilizing agents, principally phosphorus, which are traced in their movements from the roots to the stem and leaves. A study is made of the capacity of roots of different sizes to supply nourishment to the parts of the plant and the role which microorganisms play in the soil. Table; illustrations; diagram.

Institution: ...

Submitted : ...

RATNER, Eusebe

V. Ratner, Eusebe I. Pitani: *Primeneniye udobreniy (Fertilization and Use of Fertilizers)*. Moscow: Indel'nyi Akad. Nauk S.S.S.R., 1958. 140 pp. AG

RATNER, Ye. I.; SAMOYLOVA, S. A.

Extracellular phosphatase activity of roots. *Fisiol. rast.* 2
no. 1:30-41 Ja-F '55. (MLA 8:9)

1. Institut fiziologii rasteniy imeni K. A. Timiryazeva Akademii
nauk SSSR, Moscow
(Roots (Botany)) (Phosphatase)

RATNER, Ye. I.

Side-dressing is a highly important and effective step in the nutrition system for grain crops. Fiziol.rast.2 no.3:293-297 My-Je '55. (MLRA 8:11)

1. Institut fiziologii rasteniy imeni K.A.Timiryazeva Akademii nauk SSSR, Moscow
(Fertilizers and manures)

Ratner, E.I.

Assimilation by plants of organic compounds as glycerophosphoric acid in connection with extracellular activity of root phosphatase. E. I. Ratner and S. A. Samoilova (K. A. Timiryazev Inst. Plant Physiol., Moscow). *Fiziol. Rastenii* 2, 518-28(1955); cf. R. and S. *ibid.* 2, 30(1955).—In expts. with corn plants it was shown that glycerophosphate is superior to mineral P as fertilizer in early stages of growth, and in final crop yields. The assimilation of P from glycerophosphate is not the result of its preliminary cleavage to inorg. phosphate in the plant, but rather the cleavage occurs extracellularly in the medium induced by enzymes originating in the plant. Ribonucleic acid is a less effective source of P, followed in turn by lecithin and phytin. The latter is definitely accumulated in the roots of the plant.
G. M. Kosolapoff

N/D

(2)

RATNER, Ye.I.; TUYEVA, O.F.

In memory of Il'ia Ivanovich Kolosov. *Fiziol.rast.* 2 no.6:594-497
M-D '55. (MLRA 9:5)

(Kolosov, Il'ia Ivanovich, 1906-1955)

SHAKHOV, Aleksandr Aleksandrovich; RATNER, Ye.I., doktor biologicheskikh nauk, otvetstvennyy redaktor; KLESHNIN, A.P., redaktor izdatel'stva; SHEVCHENKO, G.N., tekhnicheskii redaktor

[Salt resistance of plants] Soloustoichivost' rastenii. Moskva, Izd-vo Akademii nauk SSSR, 1956. 550 p. (MLRA 9:11)
(Plants, Effect of salt on)

RATNER, YE. I.

✓ Possible role of the vitamins produced by soil micro-organisms in the root nutrition of plants. E. I. Ratner and I. N. Dobrokhotova (K. A. Timiryazev Inst. Plant Physiol., Moscow). *Fiziol. Rastenii* 3, 101-9 (1956).—Expts. with corn, hemp, and sunflower plants showed that soil supply of vitamins such as thiamine, pyridoxine, and pantothenic acid results in uptake of these by the plant and accumulation of them in leaves and roots, i.e., parts in which vigorous growth processes take place. While 2-yr. expt. with sunflower showed that such extra supply of vitamins B₁, B₂, B₆, and PP, and pantothenic acid somewhat repressed growth of leaves, stems, and seed hulls, but the yield of seeds and their fat content were raised. Ammonia N and org. N tend to be raised by such vitamins, along with increased synthesis of amino acids in the roots. Microbes are regarded as natural suppliers of the vitamins. C. M. K.

2

RATNER, E. I.

USSR/Plant Physiology. Mineral Nutrition

I-3

Abs Jour : Ref Zhur - Biol., No 7, 1958, No 29390

Author : ~~Ratner E.I.~~, Kolosov I.I., Ukhina S.F., Dobrokhotova I.N.,
Kazuto O.N.

Inst : Not Given

Title : The Assimilation by Plants of Aminoacids as a Source of
Nitrogen

Orig Pub : Izv. AN SSSR, ser. biol., 1956, No 6, 64-82

Abstract : Experiments on corn and sunflower were carried out in sterile cultures in the Institute of Plant Physiology of the Union of Soviet Socialist Republics by the method of Shulov as modified by Feodorov. Glycocol, aspartic and glutamic acids, and arginine were assimilated by corn and sunflower plants but their effectiveness was considerably lower than the effectiveness of mineral Nitrogen. Lysine, alanine, tyrosine and guanine were assimilated by the corn plants but little. Phenylalaline was toxic to corn, and in small concentrations after the use of N nitrate had a building effect (the formation

Card : 1/2

RATNER, Yevsey Idelevich; KURSANOV, A.L., akademik, otv.red.;
SHAROVATOVA, I.B., red.izd-va; GUSEVA, A.P., tekhn.red.

[Plant nutrition and the activity of root systems]
Pitanie rastenii i shiznedatel'nost' ikh kornevykh
sistem. Moskva, Izd-vo Akad.nauk SSSR, 1958. 102 p.
(Timiriasevskie chteniia, no.16) (MIRA 12:6)
(Plants--Nutrition) (Roots (Botany))

VOLODARSKIY, Nikolay Il'ich: ~~RATNER~~ Ye.I., doktor biol.nauk, prof.,
otvetstvennyy red.; SAMIGIN, G.A., red.izd-va; MAKUNI, Ye.V.,
tekh.n.red.

[Role of nitrogen in the ontogenesis of tobacco] Rol' azota v
ontogeneze tabaka. Moskva, Izd-vo Akad.nauk SSSR, 1958. 187 p.
(Plants, Effect of nitrogen on) (MIRA 11:6)
(Tobacco)

RATNER, Ye.I.; SAMOYLOVA, S.A.

Nucleic acid assimilation by plants and extracellular phosphatase activity of roots [with summary in English]. *Fiziol. rast.* 5 no.3: 209-220 My-Je '58. (MIRA 11:6)

1. Institut fiziologii rasteniy im. K.A. Timiryazeva Akademii nauk SSSR, Moskva.

(Nucleic acids)
(Phosphatase)
(Roots (Botany))

17(1)
AUTHORS: Ratner, Ye. I., Dobrokhotova, I. N. SOV/20-122-5-54/56

TITLE: On the Nature of the Vitamin Influence Upon the Synthetic Activity of Roots in the Assimilation of Mineral Nitrogen by Plants (K poznaniyu prirody vliyaniya vitaminov na sinteticheskuyu aktivnost' korney pri usvoyenii rasteniyem mineral'nogo azota)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 5, pp 944 - 947 (USSR)

ABSTRACT: Among the physiologically active substances constantly formed in the processes of the life activity of soil microbes the vitamins take an important place. This mainly refers to the vitamins of group B (Ref 1). As was proved earlier (Ref 2) the B vitamins introduced to the soil are easily absorbed by the roots and then are transported into the organs above ground by the juice. In the young *Hibiscus cannabinus* L. these vitamins are mainly accumulated in the leaves and especially in the roots, i.e. in those "Main Laboratories" where according to modern conceptions

Card 1/5

On the Nature of the Vitamin Influence Upon the
Synthetic Activity of Roots in the Assimilation of Mineral Nitrogen by
Plants

SOV/26-122-5-54/56

The processes of metabolism take place most intensely. This character of distribution of the vitamins in their concentration in the plant from the surroundings was also proved in other experiments carried out with peas, in which the plants were enriched with vitamins by the root nodule bacteria (Table 1). As it may be seen the content of a number of vitamins, especially in the roots, increased without following the increase in nitrogen which was greatest in the leaves. Thus, a similarity of the storage of B vitamins in the roots between a non-legume (marsh mallow) in a direct concentration and a legume (pea) in a concentration through root nodule bacteria was found. In connection herewith it seems to be necessary to explain the influence of the vitamins on the life activity of the root itself, especially on its metabolic functions. As it was earlier found by the authors (Ref 2) the synthetic activity of sunflower seeds increases jump-like

Card 2/5

On the Nature of the Vitamin Influence Upon the Synthetic Activity of Roots in the Assimilation of Mineral Nitrogen by Plants

SOV/20-122-5-54/56

under the influence of the vitamins of the group B. To explain the nature of this phenomenon the authors wanted to trace the influence of the vitamins upon the working up of mineral nitrogen in the roots in the case of a substitution of nitrate nitrogen by ammonium nitrogen under the same pH-conditions. The maize type "Bel'yarskye zoloto" was used for this experiment. The results of the analysis are compiled in table 2. It may be seen from them that: 1) The classical data supplied by D.N. Vryanishnikov (Ref 3) were proved; the plants absorb more energetically the ammonium nitrogen than the nitrate nitrogen even when the concentration of the former in the solution is only half of that of the latter. 2) The activity of the maize root differs to a great extent in the working up of the two nitrogen forms. 3) The influence of the vitamins upon the increase of the synthetic activity of the roots in the working up of the mineral nitrogen absorbed from outside is marked

Card 3/5

On the Nature of the Vitamin Influence Upon the
Synthetic Activity of Roots in the Assimilation of Mineral Nitrogen by
Plants

SOV/26-122-9-54/56

only when the nitrate serves as nitrogen source. The ammonium absorbed does not suffer any considerable change by the vitamins. This fact makes it possible to assume that the vitamins stimulate the activity of the root system which cause the first stage of nitrification more rapidly; this stage is absolutely necessary for the synthesis of organic compounds in the plant; the reduction of the nitrate form of nitrogen to ammonia. When this stage seems to be achieved the level of synthesis of the amino and amino acids from the nitrate nitrogen approaches a level characteristic for plants additionally supplied with ammonium nitrogen. There are 1 figure, 2 tables, and 3 Soviet references.

ASSOCIATION: Institut fiziologii rasteniy im.K.A.Timiryazeva Akademii
Nauk SSSR (Institute of Plant Physiology imeni Timiryazev
AS USSR)

Card 4/5

7. Absorption and translocation of mineral elements through the leaves of plants. T. I. Zhuravskaya, A. V. Kozlovskaya, V. I. Kozlovskaya, Academy of Sciences, Moscow.
8. Radiophysics processes under the conditions of an adverse water balance. N. N. Kozlovskaya, A. V. Kozlovskaya, Institute of Botany, Academy of Sciences, Moscow.
9. The role of oxidative enzymes in the regulation and storage of proteins. B. A. Kozlovskaya, A. V. Kozlovskaya, Institute of Botany, Academy of Sciences, Moscow.
10. Importance of mineral composition of plants in the environmental conditions. G. I. Kozlovskaya, Academy of Sciences USSR, Moscow.
11. Interaction of light and water in growth substances and their action. A. P. Kozlovskaya, A. V. Kozlovskaya, V. I. Kozlovskaya, Institute of Botany, Academy of Sciences, Moscow.
12. Protein acids and plant metabolism. V. I. Kozlovskaya, Institute of Botany, Academy of Sciences USSR, Moscow.
13. The state of carbohydrates in the nucleus and cytoplasm in the plant cell. V. I. Kozlovskaya, A. V. Kozlovskaya, A. P. Kozlovskaya, A. I. Kozlovskaya, V. I. Kozlovskaya, Institute of Botany, Academy of Sciences, Moscow.
14. Molecular properties of plant cell nuclei. B. A. Kozlovskaya, A. V. Kozlovskaya, A. I. Kozlovskaya, Institute of Botany, Academy of Sciences USSR, Moscow.
15. Interrelationships between respiration and photosynthesis. O. V. Kozlovskaya, V. I. Kozlovskaya, Institute of Botany, Academy of Sciences USSR, Moscow.
16. Outcomes other than photosynthesis in plants. P. A. Kozlovskaya, A. V. Kozlovskaya, Institute of Botany, Academy of Sciences USSR, Moscow.
17. On assimilation problems. V. I. Kozlovskaya, Institute of Plant Physiology, Leningrad, USSR.
18. Promoting effect of microelements on the resistance of plants to unfavorable conditions. N. V. Kozlovskaya, Academy of Sciences USSR, Leningrad.
19. L'application des techniques morphologiques et chimiques des enzymes pour la détermination de la teneur en sucres dans les plantes en croissance. V. V. Kozlovskaya, L'Académie des Sciences de l'URSS, Moscou.
20. Realization of the changes of physiological processes in plants coordinated with fruit hardening. T. I. Zhuravskaya, N. I. Kozlovskaya, A. I. Kozlovskaya, and N. V. Kozlovskaya, V. I. Kozlovskaya, Institute of Botany, Academy of Sciences USSR, Leningrad.
21. Photoperiodism in trees. B. A. Kozlovskaya, Laboratory of Light Physiology, Leningrad, USSR.
22. The vegetation of natural grasslands of the USSR. T. V. Kozlovskaya, Leningrad.
23. The ecology of fertilization in flowering plants. N. Kozlovskaya, Botanical Institute, Academy of Sciences USSR, Leningrad.
24. The correlation between the concepts "forest ecosystem" and "forest biogeocenosis" and their importance for the classification of forests. V. I. Kozlovskaya, Forest Institute, Academy of Sciences USSR, Moscow.

Material published but not presented at the Intl. Botanical Congress, Moscow, 1968, June-Aug 1968.

RATNER, Yevsey Idelevich; BURKIN, Ivan Alekseyevich; KURSANOV, A.L.,
akademik, otv.red.; ANTONYUK, L.D., red.izd-va; UL'YANOVA,
O.G., tekhn.red.

[Molybdenum and crop yields] Molibden i urozhai. Moskva, Izd-vo
Akad.nauk SSSR, 1959. 39 p. (MIRA 12:12)
(Plants, Effect of molybdenum on)

RATNER, Ya. I.; AKIMOVICH, T.A.; UKHINA, S.F.

Paths and mechanism of the movement of mineral substances from roots to the aerial organs of plants as exemplified by the translocation of P32 [with summary in English]. Fiziol.rast. 6 no.1:3-12 Jan '59. (MIRA 12:2)

1. K.A. Timiryazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.

(Plants, Motion of fluids in)

RATNER, Ye.I.; BURKIN, I.A.; AKIMCHIKINA, T.A.

Microdoses of molybdenum in the nutritional system of grain crops and grasses sown under them in relation to their productivity and protein metabolism. Fiziol.rast. 6 no.2:232-243 (MIRA 12:5)
Mr-Apr '59.

1. K.A.Timiryazev Institute of Plant Physiology, U.S.S.R.
Academy of Sciences, Moscow.

(Plants, Effect of molybdenum on)
(Oats) (Grasses)

BARINOV, G.V.; RATNER, Ye.I.

Uptake of nutrients through leaves in foliar feeding of plants.
Fiziol.rast. 6 no.3:324-332 My-Je '59. (MIRA 12:8)

1. K.A.Timiryazev Institute of Plant Physiology, the U.S.S.R.
Academy of Sciences, Moscow and Institute of Biology, West Si-
berian Affiliate of U.S.S.R. Academy of Sciences, Novosibirsk.
(Leaves) (Fertilizers and manures)

RATNER, Ye.I.; UKHINA, S.F.

Some characteristics of the metabolism of nitrogenous substances
in the roots of various plants as exemplified by the assimilation
of exogenous amino acids. Fiziol. rast. 12 no.5:814-824 S-0 '65.
(MIRA 19:1)

1. Institut fiziologii rasteniy imeni Timiryazeva AN SSSR, Moskva.

RATNER, Ye.I.; ARIMOKHINA, T.A.

Conjugate effect of molybdenum and some vitamins on the productivity of symbiotic nitrogen fixation in the soybean. *Agrokhimia* no. 1:59-68 Ap '64. (MIRA 17:10)

1. Institut fiziologii rasteniy imeni K.A.Timiryazeva AN SSSR.

RATNER, Ye.I.

Molybdenum and the problem of biological nitrogen in agriculture.
Izv. AN SSSR Ser. biol. no.2:223-243 Mr-Apr'64 (MIRA 17:3)

1. Institute of Plant Physiology, Academy of Sciences of the
U.S.S.R., Moscow.

BERDYSHEV, Gennadiy Dmitriyovich, kand. med. nauk; RATNER, Vadim Aleksandrovich; SALGANIK, R.I., kand. biol. nauk, red.;
IVANNIKOV, B.F., red.

[Code of heredity] Kod nasledstvennosti. Novosibirsk,
Novosibirskoe knizhnoe izd-vo, 1963. 85 p. (MIRA 17:5)

1. Nauchnyye sotrudniki Instituta tsitologii i genetiki
Sibirskogo otdeleniya AN SSSR (for Berdyshev, Ratner).

RATNER, Ye.I.; UKHINA, S.F.

Transformation of amino acids absorbed from the outside
in the roots of corn. Fiziol. rast. 10 no.4:393-399 J1-Ag '63.
(MIRA 16:8)

1. Timiriazev Institute of Plant Physiology, U.S.S.R. Academy
of Sciences, Moscow.

RATNER, Ye.I.; SMIRNOV, A.M.; KHUAN KHUN-SHU [Huang Hung-shu]; UKHINA, S.F.;
KUZOVKINA, I.N.

Assimilation of amino acids as a source of nitrogen by isolated alfalfa
roots and by entire pea plants in sterile cultures. Fiziol. rast. 10 no.
6:673-681 N-D '63.
(MIRA 17:1)

1. K.A. Timiriachev Institute of Plant Physiology, U.S.S.R. Academy of
Sciences, Moscow.

RATNER, Ye.I.; BURKIN, I.A.; TSKHOVREBASHVILI, G.G.

Effect of molybdenum on the variation of plastid pigments in the leaves of various plants. Fiziol. rast. 8 no.6:707-714 '61.

(MIRA 16:7)

1. Timiriazev Institute of Plant Physiology, U.S.S.R. Academy of Sciences, Moscow.

(Chlorophyll)

(Plants, Effect of molybdenum on)

ZHURBITSKIY, Zenon Iosifovich, prof.; RATNER, Ye.I., doktor
biol. nauk, prof., otv. red.; OZERETSKOVSKAYA, O.L.,
red.izd-va; MAKUNI, Ye.V., tekhn. red.

[Physiological and agrochemical principles underlying the
use of fertilizers] Fiziologicheskie i agrokhimicheskie
osnovy primeneniia udobrenii. Moskva, Izd-vo AN SSSR,
1963. 292 p. (MIRA 16:10)

(Fertilizers and manures)

RATNER, Ye.I.; AKIMOCHKINA, T.A.

Role of molybdenum and vitamins in the assimilation of nitrogen
from nitrates by plants. Fiziol. rast. 9 no.6:663-673 '62.
(MIRA 15:12)

1. Timiriasev Institute of Plant Physiology, U.S.S.R.
Academy of Sciences, Moscow.

(Nitrogen metabolism)
(Plants, Effect of molybdenum on)
(Plants, Effect of vitamins on)

RATNER, Ye.I.; SMIRNOV, A.M.; KHUAN KHUN-SHU [Huang Hung-shu]

Importance of molybdenum for the growth of isolated alfalfa roots
in relation to the acidity and aluminum content of the medium.
Fiziol. rast. 9 no.3:279-288 '62. (MIRA 15:11)

1. K.A.Timiriazev Institute of Plant Physiology, U.S.S.R. Academy
of Sciences, Moscow.

(Plants, Effect of molybdenum on)
(Plants, Effect of aluminum on)
(Hydrogen-ion concentration)

KOLOSOV, Il'ya Ivanovich, doktor beil. nauk (1906-1955); RATNER, Ye.I., doktor bil. nauk, prof., otv. red.; VETROVA, I.V., red. izd-va; DOROKHINA, I.N., tekhn. red.

[Absorptive activity of the root systems of plants] Poglotitel'naya deiatel'nost' kornevykh sistem rastenii. Moskva, Izd-vo Akad. nauk SSSR, 1962. 387 p. (MIRA 15:10)
(Absorption (Physiology)) (Roots (Botany))

RATNER, Ye.I.; UKHINA, S.P.

Root metabolism as related to the absorption and assimilation of
amino acids by plants. Izv. AN SSSR. Ser.biol. no.6:865-877
N-D '61. (MIRA 14:11)

1. Institute of Plant Physiology, Academy of Sciences of the
U.S.S.R., Moscow.

(PLANTS--METABOLISM) (AMINO ACIDS) (ROOTS (BOTANY))

"Investigation of the structure of the silver centers in photographic emulsions," a paper submitted at the International Conference on Scientific Photography, Cologne, FRG, 24-27 Sep 56.

RATNER, Y. M.

"Investigation of the Structure of the Silver Centers in Photographic Emulsions,"
paper given at the International Conference on Scientific Photography, Cologne, 24-27
Sep 1956

E-3,068,138

GOLOV, G.S.; ASPEL', N.B.; POSTNIKOV, N.I.; RATHER, Ye.M.

Combining processes of catalytic reforming. Khim.i tekhn.topl.i
masel 7 no.9:8-13 S '62. (MIPA 15:8)

1. Lengiprogaz.
(Petroleum--Refining)

RATNER, Y. M.

"Investigation of the Structure of the Silver Centers in Photographic Emulsion,"
a paper given at the International Conference on Scientific Photography, Cologne,
24-27 Sep 1956.

E-3072367

RATNER, Ye.I.; BESERMEN'I, Z. [Böszörményi, Z.]

Interaction of amino acids during their absorption by wheat roots.
Fiziol. rast. 6 no.5:537-543 S-O '59. (MIRA 13:2)

I.K.A. Timiryazev Institute of Plant Physiology, U.S.S.R. Academy
of Sciences, Moscow and Institute of Plant Physiology, Eötvö
University, Budapest.
(Amino acids) (Plants--Assimilation)

COUNTRY : USSR
 CATEGORY : PLANT PHYSIOLOGY, Mineral Nutrition.
 REF. JOUR. : REF ZHUR - BIOLOGIYA, NO. 4, 1959. No. 15283
 AUTHOR : Retner, Ye.I.
 INST. : AS USSR
 TITLE : Plant Nutrition as a Factor in Its Drought-Resistance.
 ORIG. PUB. : V.s.b.: Pamyati akad. N.A. Maksimova. M., AN SSSR, 1957, 98-112
 ABSTRACT : Addition of small doses of granular phosphates with the seeds in the sowing increased the heat- and drought-resistance of the sunflower, alfalfa, millet, esparto grass, and potatoes in the Kamenna steppe. P. introduced with the sowing decreased the intensity of the process in the daytime hours, when the demand on the water balance was heaviest, and raised it noticeably in the morning hours. The total amount of

CARD: 1/3

COUNTRY :
CATEGORY : PLANT PHYSIOLOGY. I
REF. JOUR. : REF. ZHUR : BIOLOGIYA, NO. 4, 1959, No. 15283
AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : ticularly important for the "escape" of
plants from early drought which sometimes
arose right after the planting.
-- T.F. Koretskaya

CARD: 3/3

RATNER, Ye.R., inzh.

Coefficient of displacement for inland navigation cargo ships.
Sudostroenie 29 no.6:6-7 Je '63. (MIRA 16:7)
(Displacement (Ships)) (Inland water transportation)

AVDEYEV, G.K., kand.tekhn.nauk; RATNEK, Ye.R., inzh.

Materials for the calculation of water resistance to the movements
of a freighter in inland navigation. Trudy LIVT no.1:11-19 '66.
(MIRA 15:3)

(Ship resistance)

AYZENBERG, Yu.B.; GORBACHEV, N.V.; GOREV, Z.M.; DEMCHEV, V.I.;
YEFIMKINA, V.F.; IVANOVA, N.S.; KOMISSAROV, V.D.; MARKIZOVA, G.B.;
MESHKOV, V.V.; OSTROVSKIY, M.A.; RATNER, Ye.S.; SHEFTEL', Ye.B.;
YUROV, S.G.

Nikolai Nikolaevich Ermolinski; obituary. Svetotekhnika 8
no.12:28 D '62. (MIRA 16:1)
(Ermolinski, Nikolai Nikolaevich, 1894-1962)

RATNER, Ye.S.

Threshold sensitivity of radiation receivers. Opt.1 spektr.
9 no.1:101-107 J1 '60. (MIRA 13:7)
(Nuclear counters)

RATNER, Ye.S.

**Relation between vision characteristics and quantum fluctuations
of light. Dokl. AN SSSR 105 no.1:90-93 N '55. (MIRA 9:3)**

**1. Predstavleno akademikom A.A. Lebedevym.
(Optics, Physiological)**

RATNER, YU. A.

35533. O Patogeneze I Lechenii Torakal'nykh Svishchey Ognestrel'nogo
Proiskhozheniya. (Po Materialam Velikoy Otechestv. Voiny). V SB: Voprosy
Grudnoy Khirurgii. T. 111, M., 1949, c. 76-79.

Letopis' Zhurnal'nykh Statey, Vol. 48, Moskva, 1949

RATNER, Ya.A., prof.; LYUBINA, N.I., dotsent

Activity of the Oncological Society of the Tatar A.S.S.R. in
1961. Vop onk. 8 no. 10:122 '62. (MIRA 17:7)

SHABAD, L.M., prof.; RABINOVICH, Ye.A.; RATNER, Yu.A., prof.; LYUBINA, N.I.

Brief news. Vop. onk. 11 no.7:109-111 '65. (MIRA 18:9)

1. Deystvitel'nyy chlen AMN SSSR (for Shabad).

RATNER, Yu.A., prof.

Advantages of lateral anastomoses of the esophagus, stomach and intestines. Klin. khir. no.3:37-39 '65. (MIRA 18:8)

1. Kafedra khirurgii i onkologii (zav. - prof. Yu.A.Ratner)
Kazanskogo meditsinskogo instituta.

VYLEGZHANIN, N.I., dotsent; MELENKOVA, N.I.; KLEINBERG, O.Y.; KUDRYAVOVA,
S.G.; KHAYKINSON, N.Y.; KHARITONOV, A.K.; SIGAL, M.S., dotsent;
GOL'DSHTEYN, D.Ye., prof.; LEVINA, N.I., dotsent; MILICH, I.L.,
dotsent; RITNER, Yu A., prof.; JENILOV, I.V., prof.; MUKHAMED'-
YAROVA, A.K.;

Conference of physicians of the city of Kazan concerning the
results of the Eighth International Cancer Research Congress.
Kaz. med. zhurn. no. 4:72-90 '62 (MIRA 17:5)

Experience with the use of mechanical suturing in gastric surgery.
Chirurgia 48 no. 8:17-23 Aug '64.

MEMO 18:3

.. Kafedra khirurgii i onkologii (zav. - prof. Yu.A. Ratner) Kazanskogo instituta usovershenstvovaniya vrachev na baze 5-y gorodskoy klinicheskoy bol'nitsy (glavnyy vrach N.I. Polozova).

1954, 1955, 1956.

Some problems in the surgical treatment of tumors of the large intestine. Vest. khir. 93 no.12:113-116 5 '54.

(MIRA 18:5)

1. Iz kafedry khirurgii i onkologii (zav. - prof. Yu.A.Ratner) Kazanskogo instituta usovershenstvovaniya vrachev (rektor - dotsent Kh.2.Akhunzyanov) na baze 5-y gorodskoy klinicheskoy bol'nitsy (glavnyy vrach - N.I.Polozova).

RATNER, Yu.A., prof.; LYUBINA, N.I.. absent

Report on the activity of the Society of Oncologists of the Inter
A.S.S.R. for 1962. Vop. onk. 9 no.10:124 '63.

(MIRA 17:12)

RATNER, Yu.A. (Kazan', Galaktionovskaya, 22, kv. 2)

Surgical treatment of tumors located high up in the rectum. Vop.
onk. 7 no. 4:76-81 '61. (MIRA 14:4)

1. Iz kafedry khirurgii i onkologii Kazanskogo Gosudarstvennogo
instituta dlya usovershenstvovaniya vrachey (zav. - prof. Yu.A.
Ratner).

(RECTUM--CANCER)

KHARITONOV, I.F., doktor med.nauk (Kazan'); RATNER, Yu. A., prof. (Kazan');
SHUBIN, V.N., prof. (Kazan'); SHULUTKO, L.I., prof. (Kazan');
ROZENGARTEN, M.Yu. (Kazan')

Twenty-seventh All-Union Congress of Surgeons. Kaz.med.zhur. no.5:
96-99 S-0 '60. (MIRA 13:11)
(SURGERY--CONGRESSES)

RATNER, Yu.A., prof.

Significance of precancerous diseases in oncological practice.
Kaz. med. zhur. no.2:3-6 Mr-Apr '62. (MIRA 15:6)

1. Kafedra khirurgii i onkologii (zav. - prof. Yu.A. Ratner)
Kazanskogo Gosudarstvennogo instituta dlya usovershenstvovaniya
vrachey na baze 5 gorodskoy bol'nitsy (glavnyy vrach - N.I.
Polesova).

(ONCOLOGY)

RATNER, Yuriy Aleksandrovich, prof.; RAPIKOV, M.M., red.; GALKINA,
V.N., tekhn. red.

[Intestinal tumors; their clinical aspects, diagnosis and treatment]
Opukholi kishrechnika, diagnostika i lechenie. Kazan', Tatarskoe
knizhnoe izd-vo, 1962. 206 p. (MIRA 15:6)
(INTESTINES--TUMORS)

RATNER, Yu. A.; LIYUBINA, N. I.

Activity of the Oncological Society of the Tatar ASSR for 1960.
Vop. onk. 7 no.7:112-115 '61. (MIRA 15:2)

(TATAR A.S.S.R.—ONCOLOGICAL SOCIETIES)

CHEBOTAREV, Roman Somenovich; RATNER, Yuriy Borisovich; GOREGLYAD, Kh.S., akademik, red.; SHUL'GA, K.V., red. izd-va; STOGOVA, I.D., red.-leksikograf; YERMILOV, V.M., tekhn. red.

[Short dictionary of parasitology]Kratkii parazitologicheskii slovar'. Pod obshchei red. Kh.S.Goregliada. Minsk, Gos.izd-vo sel'khoz.lit-ry BSSR, 1962. 320 p. (MIRA 15:9)

1. Akademiya nauk Belorusskoy SSR (for Goreglyad ' .
(Parasitology--Dictionaries)

TRATSEVITSKAYA, B.Ya.; RATNER, Yu.Ye.; KRASNOPEVTSEVA, G.N.

Interaction of nickel-bearing minerals with carnallite. Trudy
Inst. met. no.12:45-48 '63. (MIRA 16:6)

(Nickel ores) (Carnallite)

KOZHUKH, V.Ya.; KAMINSKIY, G.P.; RATNER, Yu.Z.

Arrangement for the control of large bell performance in blast
furnaces. Metallurg 7 no.6:9-11 Je '62. (MIRA 15:7)

1. Azovskiy staleplavil'nyy zavod im. Sergo Ordzhonikidze
v Zhdanove.

(Blast furnaces--Equipment and supplies)

ROSTOVTSSEV, S.T., doktor tekhn.nauk, prof., PASHKOV, V.D., kand.tekhn.nauk;
RATNER, Yu.Z.

Review of V.M. Shchedrin's book "Theory of high pressure blast
furnace smelting." Stal' 24 no.6:502-506 Je '64. (MIRA 17:9)

1. Gosudarstvennyy soyuznyy institut po proyektirovaniyu
metallurgicheskikh zavodov (for Pashkov). 2. Zavod "Azovstal'"
(for Ratner).

SOV/137-58-9-18541

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 9, p 51 (USSR)

AUTHORS: Rabkin, M. A., Torgovitskaya, S. B., Ratner, Yu. Z.,
Shishatskiy, F. Ye., Fishteyn, B. M.

TITLE: Prevention of Corrosion in Cooling-system Components of a
Blast Furnace (Zashchita detaley sistemy okhlazhdeniya
domennoy pechi ot korrozii)

PERIODICAL: Sb. nauchn. tr. Zhdanovsk. metallurg. in-t, 1957, Nr 4,
pp 222-232

ABSTRACT: The corrosion destruction of cooling-system components
(CSC) of the "Azovstal'" plant blast furnaces employing sea
water as a coolant was investigated. It has been established
that the water-pipe system of a furnace begins to fail as early
as 2.5 months after a general overhaul of the furnace, and
that, on the average, approximately 4000 m of the 10,000 m
of water pipes must be replaced within a one-year period.
The following factors contribute to the destruction of the
components: Electro-chemical corrosion (C) (formation of
macrogalvanic couples at the junctions of steel pipes with
bronze, copper, cast-iron, and other CSC); destruction of

Card 1/2

SOV/137-58-9-18541

Prevention of Corrosion in Cooling-system Components of a Blast Furnace

metal and its protective film by erosion caused by hard particles suspended in the water; chemical C due to sulfur-dioxide and carbon-dioxide gases present in blast-furnace shops at elevated temperatures. Threaded areas and their adjoining zones suffer the greatest destruction, also steel Tees and cast-iron elbows in which the oxide film composed of the C products is destroyed by impact as the water jet is forced into a turn. The investigation revealed the following: The inefficiency of electrochemical protection of the CSC by Zn protectors; the inefficiency of the employment of Al-Zn alloys which become overgrown with barnacles and other impurities contained in the water; the ineffectiveness of the method whereby pipes and fittings are internally coated with cadmium and enamel. In order to prevent C, it is recommended that components made of different metals be joined together by means of 50-300 mm long connecting pipes made of Cr-Ni stainless steel (utilizing for this purpose the waste products of the pipe-rolling industry) and that all fittings be coated internally with asbestos cement (85% cement and 15% asbestos).

1. Blast furnaces--Performance
2. Blast furnaces--Equipment
3. Corrosion--Control

L. Kh.

Card 2/2

RABIN, M.A., kand.khim.nauk; TORGOVITSKAYA, S.B., inzh.; RATNER, Yu.Z.;
SHISHATSKIY, F.Ye.; FISHTYN, B.M.

Protecting blast furnace cooling system parts from corrosion.
Sbor.nauch.trud. Zhdan.met.inst. no.4:222-235 '57. (MIRA 11:11)
(Blast furnaces--Cooling) (Corrosion and anticorrosives)

RATNER, Yu. Z.

RAYKO, V.V. nauchnyy sotrudnik; VOLKOV, Ya.R. nauchnyy sotrudnik; LEVITSKIY, D.A. nauchnyy sotrudnik; KHODAK, A.N. nauchnyy sotrudnik; RATNER, Yu. Z. inzhener; VORODIMOV, N.I. inzhener; GRISHAYEV, N.N. inzhener; SHULYATSKIY, D.I. inzhener, redaktor; ANDREYEV, S.A. tekhnicheskiy redaktor

[Rules for the technical operation of cranes] Pravila tekhnicheskoi ekspluatatsii pod'emnykh kranov. Khar'kov, Gos. nauchno-tekhn. izd-vo lit-ry po cherno i tsvetnoi metallurgii, 1957. 167 p.
(MLRA 10:5)

1. Russia (1923 U.S.S.R.) Ministerstvo chernoy metallurgii.
 2. Vsesoyuznyy nauchno-issledovatel'skiy institut organizatsii chernoy metallurgii. (for Rayko, Volkov, Levitskiy, Khodak)
 3. Otdel glavnogo mekhanika Ministerstva chernoy metallurgii. (for Shulyatskiy)
 4. Zavod "Azovstal'" (for Ratner)
 5. Zavod "Zaporozhstal'" (for Vorodimov, Grishayev)
- (Cranes, derricks, etc.)

RATNER, Yu, Z.

RATNER, Yu. Z., ROMANENKO, A. G.

Lengthening the life of blast-furnace charging machines. Stal' 17
no. 4:370-371 Ap '57. (MLRA 10:5)

1. Zavod "Azovstal".
(Blast furnaces)

AUTHORS: Ratner, Yu. Z. and Romanenko, A.G. (Azovstal' Works). 376

TITLE: Prolongation of the life of blast furnace charging equipment (Prodleniye sroka sluzhby zasypnogo apparata domennoy pechi).

PERIODICAL: "Stal'" (Steel), 1957, No.4, pp.370-371 (U.S.S.R.)

ABSTRACT: The formation of holes in the bell and its sit on high top pressure operating furnaces was found to be due to water. 80-90% of this water was brought in by pressure equalising semi-clean gas and 10-20% from steam condensate from equalising gas pipes of the small bell. A check on the amount of water passing into the space between the bells is recommended using a water catcher shown in the diagram and if necessary to instal a water catch on the large bell equalising line. There is one diagram.

ROMANENKO, A.G.; RATHER, Yu.Z.

Enclosed weighing-car cabins. Metallurg no.11:5-8 N '56.

(MIRA 10:1)

1. Starshiy inzhener-konstruktor proyektного otdela zavoda "Azovstal'" (for Romanenko). 2. Pomoshchnik nachal'nika domennogo tsekh'a po oborudovaniya (for Ratner).

(Zhdanov--Metallurgical plants) (Weighing machines)

DOBROKHOTOV, G.N.; ONUCHKINA, N.I.; RATNER, Z.L.

Autoclave reduction of nickel and copper hydroxides by hydrogen.
TSvet.met. 35 no.8:44-47 Ag '62. (MIRA 15:8)
(Nonferrous metals--Metallurgy) (Hydrometallurgy)

S/136/62/000/008/001/004
E021/E435

AUTHORS: Dobrokhotoy, G.N., Onuchkina, N.I., Ratner, Z.L.

TITLE: Autoclave reduction of nickel and cobalt hydroxides
by hydrogen

PERIODICAL: Tsvetnyye metally, no.8, 1962, 44-47

TEXT: A finer and purer metallic powder can be produced by autoclave reduction of hydroxides than by reduction of ammoniacal-sulphate solutions. Diffusion of hydrogen into the metal during the process also results in an increase in lattice parameter which produces powder which has better catalytic properties. Experiments were carried out in autoclaves with 1 to 3 litre capacity. Hydrated nickel oxide was prepared from hot solutions of nickel sulphate and sodium hydroxide. The precipitate was washed on a vacuum-filter and the charge in the autoclave had a solid to liquid ratio of 1:10. Hydrated cobalt oxide was prepared from solutions of sodium hypochlorite and boiling cobalt sulphate. The charge for the autoclave had a solid to liquid ratio of 1:40. Hydrogen was fed in as soon as the required temperature was reached. The
Card 1/2

Autoclave reduction of nickel ... S/156/62/000/008/001/004
E021/E435

degree of reduction was found by removing samples periodically from the autoclave. Before each experiment the internal surfaces of the autoclave were pickled in hot 5% nitric acid. Relatively coarse, low activity carbonyl powders (nickel 41 μ , cobalt 71 μ) were used for nucleation in the reduction process. Curves of the degree of reduction against time show in each case a marked induction period; this is attributed to unstable oxide compounds on the nucleating powder and the slow rate of crystallization of the first metallic grains. The optimum conditions of reduction are: 200 to 250°C; a partial pressure of hydrogen of 20 to 30 atm; 1 to 1.5 hours duration. The obtained powder was finely dispersed, had high catalytic properties and low cementation activity. There are 2 figures and 3 tables.

Card 2/2

DOBROKHOTOV, G.N.; RATNER, Z.L.

Autoclave leaching of cobalt-arsenic ores from the Khovu-Aksy
deposit. TSvet.met. 34 no.10:53-58 0 '61. (MIRA 14:10)

1. Gipronikel'.

(Khovu-Aksy region--Cobalt ores) (Leaching)

FRANTSOV, V.P., inzh.; MALIKOV, G.P.; RATNER, Z.M.; MOSHKOVICH, Ye.I.

Pouring of stainless steel with addition of magnesium alloy
chips. Stal' 22 no.3:238-239 Mr '62. (MIRA 15:3)
(Steel, Stainless—Electrometallurgy)

S/133/62/000/003/003/001
A054/A127

AUTHORS: Frantsov, V. P., Malikov, G. P., Ratner, Z. M., Moshkevich, Ye. I.,
Engineers

TITLE: Casting stainless steel with magnesium-alloy chips

PERIODICAL: Stal', no. 3, 1962, 238 - 239

TEXT: Magnesium has a high affinity to oxygen and nitrogen. When magnesium is added during pouring, it binds the oxygen and nitrogen of the ingot-mold atmosphere which has a favorable effect on the metal quality. Tests were carried out with bottom-cast 2.85-ton ingots of 1X18H9T (1Kh18N9T) stainless steel. Prior to casting, the ingot molds were cleaned, blown through with air, covered, but not coated. The amount of magnesium necessary to bind the oxygen of the ingot mold atmosphere is 65 g/ton of ingot, while an additional 10 g/ton is required for binding nitrogen. When МЛ (ML), МЛ1 (ML1), МЛ3 (ML3), МЛ5 (ML5), МЛ7 (ML7) magnesium alloy chips are used, 80 g/ton is the required quantity. The magnesium must be introduced into the aerated dry molds either by a spoon or in paper packs. The temperature of the ingot mold can be raised considerably when magnesium chips are used in pouring. Prior to the inflammation of the chips

Card 1/3

Casting stainless steel with magnesium-alloy chips

S/133/62/000/003/003/008
A054/A127

(5 - 7 sec. after pouring started), pouring must be slow. After inflammation, the chips flare up. The lower the metal level in the ingot mold, the smaller the part of the lower ingot surface which is affected by the splashing particles. After flaring up, pouring should be as quick as possible to maintain a thin film on the rising metal surface up to the end of casting. This method improves the ingot surface considerably. Only the lower part of the ingot (about 20% of the ingot height) has superficial defects; the other parts are completely clean. The steels cast with magnesium chips were tested according to GOST 5532 (GOST 5532) and GOST 5949-51. Their mechanical properties were better than those of conventional heats. Spectral analysis did not reveal any magnesium in the metal. No difference was found as to the corrosion-resistance of the test metal; the service life of the ingot molds used in this method is longer than that of conventional ones. The yield of flawless product was raised by an average of 3% for various kinds of rolled products. The ingots cast with magnesium chips were ground or roughened. As in general only the lower part of the ingot has to be finished, the output in this production sector rose from 0.7 - 1.2 ingot per man-shift to 2 - 3 ingots. In roughing the ingots two variants were applied: in the first, the ingot was machined only at 200 - 250 mm from the bottom (to 10 - 12 mm

Card 2/3